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Ex. 4 - CBI

DATE: March 27, 2012

TO: Kelley Chase, EPA Region 3 OSC
Cynthia Caporale, EPA Region 3 OASQA

THROUGH: **Ex. 4 - CBI**, SERAS Program Manager

FROM: **Ex. 4 - CBI** SERAS QA/QC Officer

SUBJECT: VERIFICATION/COMPLETENESS CHECK – DIMOCK, PA LABORATORY DATA
File 1202003 FINAL PART 2 of 3 R33907 03 19 12 1713.pdf
File 1202004 FINAL PART 2 of 3 R33907 03 21 12 1435.pdf

INTRODUCTION

On March 25 and 26, 2012, a review of the case narratives and corresponding certificates of analysis from the EPA R3 (VOCs, SVOCs, Glycols and Alcohols Reports Posted Mar 20 and VOCs, SVOCs and Alcohols Reports Mar 21) was conducted at the SERAS facility in accordance with the Follow-Up Verification/Completeness Check agreed upon during our teleconference on Wednesday 2/8/12.

The assumptions for this review include the following: 1) Case narratives from the Regional labs and/or subcontract labs have been reviewed in accordance with Regional or Environmental Services Assessment Team (ESAT) protocols and contain all pertinent and complete information to conduct the completeness check. SERAS will base this review on the information provided by the laboratory and not on an actual data package; and 2) SERAS will relay any "red" flags to the EPA R3 personnel to resolve and determine data usability.

OBSERVATIONS

In accordance with Table 1 – Field and QC Sampling Summary (Rev01 - 2/3/12), Table 2 – Sample Analytical Requirements Summary (Rev01 – 2/3/12), Methods for Groundwater and Surface Water Samples and the R3 SOPs for SVOCs (R3QA201-090111), VOCs (R3QA210-030410), glycols (SW846 8321/ASTM D773-11 Modified) and alcohols (R3QA203-013012), the following observations were noted and need to be clarified/resolved.

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1. For VOCs, the following qualifications should be applied to the following samples as noted based on the blank results (method, field, trip in that order) in accordance with the National Functional Guidelines: Acetone 3.3U for HW15a-P and HW31-P, acetone 4.0U for FB11 and FB12, acetone 4.6U for FB13, acetone 2.0U for HW51-P and HW43-P and acetone 3.2U for EB02; chloroform 0.5U for HW15a-P, HW15a, EB02, FB11, FB12 and FB13; toluene 0.5U for FB11and FB13; toluene 0.6U for FB12; and o-xylene 1.0U for EB02, FB11, FB12 and FB13.
2. For VOCs, the MS/MSD recoveries for bromomethane (48%/54%) for sample HW45 were outside the 70-130% criterion. Bromomethane results for sample HW45 should be qualified "UJ" in the Scribe result column.
3. For VOC analysis, there doesn't appear to be any accuracy data for cyclohexane, Freon 113, methylacetate, methylcyclohexane or MTBE printed on the laboratory report. It appears that these compounds were added to the MS. All compound recoveries were calculated and within the QC criterion. No additional qualifications are necessary.
4. For glycols, there is a statement in the case narrative stating that the blank spike results for two parameters were outside of quality control acceptance limits. All blank spike results were within QC criteria. This statement may be a carryover from a previous report. No additional qualifications are necessary.
5. For SVOCs, the following qualifications should be applied to the following samples as noted based on the blank results (method, field, in that order) in accordance with the National Functional Guidelines: bis(2-ethylhexyl)phthalate 5.00U, diethyl phthalate 5.00U and di-n-butylphthalate 5.00U for HW45, HW45-P, HW43-P, HW43, HW15a-P, HW31-P, HW30, HW30-P, HW31, FB11, HW31z, HW15a, HW38-P, FB13, FB12, HW47, HW51, HW38, HW51-P and HW47-P; and diethyl phthalate 5.00U and di-n-butyl phthalate 5.00U for EB02.
6. This reviewer agrees with the raising the reporting limits to 60 µg/L for 4-chloroaniline, 2-methoxyethanol, and 3-nitroaniline for Batch BB20801 based on the acceptable recoveries in the mid-level spike for samples HW45, HW45-P, HW43-P, HW43 and EB02. No additional qualifications are necessary.
7. In the case narrative, the first and second lines under SVOCs state "For samples 1202003-01 thru -05, quantitation limits are elevated for 2-methoxyethanol and 3,3'-dichlorobenzidine due to 0% recovery in the 5ppb LCS" and "Results for the mid-level quality control check are within acceptance limits; therefore Quantitation limits are raised to the mid-level value" contradict the third line "For samples 1202003-01 thru -05 data for 3,3' dichlorobenzene is rejected due to 0% recoveries in the low and mid-level spikes." Since 3, 3'-dichlorobenzidine is one of the compounds that is not included in the lab report, this reviewer can't verify which statement is correct. Qualification of the data is pending based in the response from the R3 lab.
8. For SVOCs, this reviewer agrees with the lab qualification of "UJ" for 2-methoxyethanol and 1-methylnapthalene since these two compounds were not added to the spikes for Batch BB21003. The "UJ flag should be carried over into the Scribe result column for samples HW15a-P, HW31-P, HW30, HW30-P, HW31, FB11, HW31z, HW15a, HW38-P, FB13, FB12, HW47, HW51, HW38, HW51-P and HW47-P. It is also recommended that the RL for 2-methoxyethanol be raised to the mid-level spike of 40 µg/L.
9. For SVOCs, hexachlorobutadiene and nitrobenzene do not appear to have been added to the spikes for Batch BB21003. Data for all the samples in this batch (HW15a-P, HW31-P, HW30, HW30-P, HW31, FB11, HW31z, HW15a, HW38-P, FB13, FB12, HW47, HW51, HW38, HW51-P and HW47-P) should be qualified "UJ" in the Scribe result column for Hexachlorobutadiene and nitrobenzene.
10. For SVOCs, one base neutral surrogate and one acid surrogate were outside QC criteria for Batch BB21003. Since the recovery of the

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acid surrogate (2-fluorophenol) is less than 10%, all acid compounds 4-chloro-3-methylphenol, 2-chlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2,4-dinitrophenol, 4,6-dintro-2-methylphenol, 2-methylphenol, 4-methylphenol, 2-nitrophenol, 4-nitrophenol, pentachlorophenol, phenol, 2,3,4,6-tetrachlorophenol, 2,4,5-trichlorophenol and 2,4,6-trichlorophenol) should be qualified unusable "R" in the Scribe result column. Since the NFG allows for one base neutral and one acid surrogates to be out providing their recoveries are ≥10%, no qualification of the base neutral data are required. A "U" flag should be carried over into the result column for all base neutral compounds (not listed above) with the exception of pyrene which has a "J" flag.

11. It is assumed that all required instrument QC (RSD, %D, minimum response factors, etc.) specified by the method was run and was either within the criteria listed in the EPA R3 SOPs or qualified based on any deficiencies.

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1. For VOCs, the following qualifications should be applied to the following samples as noted based on the blank results (method, field, trip in that order) in accordance with the National Functional Guidelines: Acetone 2.0U for samples HW48, HW48z, HW23-P, HW23, HW22-P, HW36n, HW16, HW44 and HW49; acetone 4.5U, bromodichloromethane 0.5U, 2-butanone 2.0U, chloroform 0.5U, toluene 0.5U and o-xylene 1.0U for sample FB14; toluene for samples HW54-P and HW49; and bromodichloromethane 0.5U, 2-butanone 2.0U, chloroform 0.5U, toluene 0.5U and o-xylene 1.0U for sample FB15. The RL for acetone for sample FB15 should be raised to 4.6 due to the TB.
2. For VOCs, the bromomethane recovery for the MSD (67%) was outside of the QC criterion for HW44. Bromomethane results for sample HW44 should be qualified estimated "UJ".
3. For VOC analysis, there doesn't appear to be any precision and accuracy data for cyclohexane, Freon 113, methylacetate, methylcyclohexane or MTBE for the LCS or the matrix spikes listed in the laboratory report in Batch BB22108. It is recommended that results for these compounds for all samples in this data set be flagged as estimated "UJ" (HW48, HW48z, TB31, HW21, HW21z, TB33, HW23-P, TB32, HW22, HW23, HW22-P, TB34, HW36n, HW49, HW16-P, HW54-P, FB14, HW16z, HW16, HW44, HW49-P, HW36n-PFB15, HW54, TB35, TB39, TB37TB38 and TB36).
4. For VOCs, there is no case narrative in the laboratory report.
5. For SVOCs, the following qualifications should be applied to the following samples as noted based on the blank results (method, field, in that order) in accordance with the National Functional Guidelines: bis(2-ethylhexyl)phthalate 4.76U, diethyl phthalate 4.76U and di-n-butylphthalate 4.76U for samples HW16-P, HW36n-P and FB15; bis(2-ethylhexyl)phthalate 5.00U, diethyl phthalate 5.00U and di-n-butylphthalate 5.00U for samples HW49-P and HW54; diethylphthalate 4.76U and di-n-butyl phthalate 4.76U for samples HW48, HW48z, HW49 and HW16; diethyl phthalate 5.00U and di-n-butyl phthalate 5.00U for HW21, HW23-P and HW36n-P; di-n-butyl phthalate 5.00U for samples HW21z, HW22-P and FB14; di-n-butyl phthalate 4.76U for sample HW16z; and bis-2-ethylhexyl phthalate 4.76U and di-n-butyl phthalate 4.76U for samples HW22, HW23 and HW44; bis-2-ethylhexyl phthalate 5.00U and di-n-butyl phthalate 5.00U for sample HW54-P.
6. For SVOCs in Batch BB21201, 4-chloroaniline (21%) was outside the QC criterion of 30-150% for LCS1 and 2-methoxyethanol (0%) was not recovered for LCS1. No mid-level spike was analyzed. Based on additional information supplied in the case narrative for Batch 21201, 3,3'-dichlorobenzidine and 2,4-dinitrophenol were not recovered in the low level spike. 4-Dinitro-2-methylphenol was also recovered outside of the QC limits. The case narrative also indicated that pentachlorophenol was outside of the QC limits. Based on the information supplied in the report, pentachlorophenol was recovered at 18% and was within the 17-109% recovery and should not be qualified. Based on the information supplied, this reviewer agrees that the following samples should be qualified unusable (R) for 3,3'-dichlorobenzidine, 2,4-dinitrophenol and 2-methoxyethanol: HW48, HW48z, HW21, HW21z, HW23-P, HW22, HW23, HW22-P, HW36n, HW49, HW16-P, HW54-P, FB14, HW16z, HW16 and HW44. This reviewer also agrees that the following samples should be qualified "UJ" for 4-chloroaniline and 4,6-dinitro-2-methylphenol: HW48, HW48z, HW21, HW21z, HW23-P, HW22, HW23, HW22-P, HW36n, HW49, HW16-P, HW54-P, FB14, HW16z, HW16 and HW44.
7. For SVOCs in Batch BB21601, 4-chloroaniline recoveries were <10% and 2-methoxyethanol recoveries were 0% for LCS1 and LCS2. Based on additional information supplied in the case narrative, 3,3'-dichlorobenzidine and 3-nitroaniline recoveries were 0% in the low and mid-level spikes. 2,4-dinitrophenol and atrazine recoveries were outside QC limits in the low level spike but were acceptable in the mid-level spike. The case narrative also stated that 4,6-dinitro-2-methyl phenol and pentachlorophenol recoveries were low in the low-level spike. Based on the information supplied in the report, pentachlorophenol was recovered in the low level spike at 35%, was within the 17-109% recovery range and should not be qualified for sample HW49-P; the RL should remain at 5.00U. This reviewer agrees with the laboratory that results for 4-chloroaniline, 3,3'-dichlorobenzidine, 2-methoxyethanol and 3-nitroaniline be qualified unusable (R) for sample HW49-P. This reviewer also agrees with the laboratory that the RL for atrazine be raised to 60 µg/L and 4,6-dinitro-2-methylphenol be qualified "UJ".
8. For SVOCs in Batch BB21501, 2-methoxyphenol was recovered in LCS1 at 0% and pentachlorophenol was recovered at 7%. Based on additional information supplied in the case narrative, 2,2'-dichlorobenzidine, 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol were also recovered due to zero or low percent recovery in LCS1. The mid-level spike (LCS2) recoveries were within acceptance criteria. This reviewer agrees with elevating the RL to the mid-level concentration for these compounds (57.1 µg/L for samples HW36n-P and FB15; and 60 µg/L for sample HW54).
9. For SVOCs, the internal standard areas for sample HW54 were less than 50% of the area from the continuing cal or if run on an ICAL, the mid-point standard. This reviewer agrees with the qualification of "UJ" for sample HW54 only if the recoveries are within the 20-50% range for N-nitrosodimethylamine, benzaldehyde, phenol, bis(2-chloroethyl)ether, 2-chlorophenol, 2-methylphenol, acetophenone, bis(2-chloroisopropyl)ether, 1-methylnaphthalene, hexachloroethane, N-nitroso-di-n-propylamine and 4-methylphenol.
10. For SVOCs, two acid and two base neutral surrogates were outside QC limits for sample HW21z. All data for sample HW21z should be qualified unusable "R".
11. It is assumed that all required instrument QC (RSD, %D, minimum response factors, etc.) specified by the method was run and was either within the criteria listed in the EPA R3 SOPs or qualified based on any deficiencies.

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